Glycemic Outcomes for Adult Type 1 Diabetes (T1D) With and Without DKA

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BACKGROUND
T1D accounts for 10% of all diabetes and DKA accounts for 8.1 per 1,000 hospitalizations. Glycemic outcomes have not been reported for adults with specifically Type 1 diabetes. We describe hospital glycemic outcomes for patients with T1D with and without DKA. Comparison outcomes for hypoglycemia rates and Time To Target for T1D without DKA do not exist.

METHODS
We extracted individual-level data from the Glytec® Inpatient Database to examine glycemic outcomes and insulinselts based on prespecified target blood glucose (BG) ranges. Data was extracted from 154 hospitals located in 17 different states in the United States (2015-2020). All patients were treated with a standard continuous insulin infusion (CII) process, managed by Glucomanderm™ IV, the dosing module within Glytec’s eGMS®. T1D was determined based on ICD E10 and subclassifications. The non-DKA group included patients who did not meet the DKA criteria. DKA was defined as per the ADA definitions. Prevalence of hypoglycemia and time to target (TTT) BG were stratified by target BG ranges.

DKA CRITERIA (All patients >18 years)
1. Bicarbonate <18 mEq/L, 2. BG >250 mg/dl, 3. Anion gap >12 mEq/L.

RESULTS
In patients with DKA (n=4592), the rates of <40 mg/dl and <70 mg/dl were 0.015% and 0.588%, respectively. Within target 140-180 mg/dl, rates of <40 mg/dl were 0.009% with a faster TTT (6.6 hours). The average admission BG was 591 mg/dl and 0.588%, respectively. Within target 140

CONCLUSION
This is the largest descriptive analysis of adult T1D patients with DKA and without DKA treated with insulin management software. A standard CII process, managed with Glucomanderm IV, can safely get patients into prespecified target range, with minimal rates of hypoglycemia.

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